Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) Apparatus for measuring micro granulometry comprising:

a) a Micro tube (1), adapted to receive a sample in which the length is many times greater than the width and the cross-section is rectangular or circular;

b) Rolling holders (8) having rolling pivots (8.1) biased towards the micro tube (1) with spring (8.2);

c) a Gamma source (10), and a Sonic source (11);

d) a Gamma receiver (12), and a Sonic receiver (13); and

e) a Vertical screw (14) and rotating nut (15) for controlling the position of the micro tube (1), and thus the sample, relative to the gamma receiver (12), sonic receiver (13), gamma source (10), or sonic source (11).

2. (Previously Presented) The apparatus of claim 1, the Micro tube (1) having a generally rectangular cross section.

3. (Previously Presented) The apparatus of claim 2, the Micro tube (1) made from glass or other transparent materials allowing further microscopic description and analysis (including visual analysis).

4. (Previously Presented) The apparatus of claim 2, the Micro tube (1) measuring 12.5 millimeters by 150 millimeters, having a total volume of 18.4 ml.

5. (Currently Amended) The apparatus of claim 1, the rolling pivots (8.1) held on the axis with spring (8.2) adapted to keep the tube in a substantially vertical position and ~~allows~~ allow relative movement while maintaining proximity with the gamma receiver (12), sonic receiver (13), gamma source (10), or sonic source (11).

6. (Previously Presented) The apparatus of claim 1, the Rolling holders comprising a pair of micro wheels made from rubber or plastic and connected with each other by a bar with rolling pivot 8.1.

7. (Previously Presented) The apparatus of claim 6, the rolling pivot (8.1) having an arm with the suspended spring pushing the micro wheels to the micro tube to hold the micro tube in a substantially vertical position.

8 (Previously Presented) The apparatus of claim 1, the Gamma source (10) adapted to provide a pulsing source of directional gamma rays focused into a narrow beam.

9. (Previously Presented) The apparatus of claim 1, the Gamma receiver (12) comprising a detector, placed at the end of a tubular lead shield, adapted to detect only the gamma rays that are not absorbed by the sample in the micro tube.

10. (Previously Presented) The apparatus of claim 9, the miniature tube 28 made from lead and adapted to absorb most of the naturally occurring background gamma rays.

11. (Previously Presented) The apparatus of claim 8, the pulsing source comprising a Motor (25) and Axis (24) adapted to rotate a sphere (22).

12. (Currently Amended) A method for measuring Microgranulometry of a sample comprising gravitationally separable particles in a micro tube, comprising:

a) placing the ~~micro~~ sample in the micro tube;

b) agitating the ~~mixture of samples~~ sample with water in the micro tube;

c) measuring ~~the~~ distinguishing properties of the gravitationally separable particles of the sample, as data ~~in the tube~~;

d) recording and interpreting the data; and

e) performing microscopic examination of the sample ~~tube that contains the resulting~~ as a layered aggregate.

13. (Currently Amended). The method of claim 12, the step of placing the ~~micro~~ sample in the micro tube comprising extracting a relatively small sample from a main bulk sample and ~~disperse~~ dispersing ~~it~~ the small sample in a dry condition into ~~in to~~ the micro tube (1).

14. (Currently Amended) The method of claim 12, the step of agitating the mixture of the sample ~~samples~~ with water in the micro tube comprising adding water to the micro tube with the sample and closing the top of the micro tube with a cap, and then shaking the micro tube ~~is shaken~~ until the sample becomes mixed in the water.

15. (Currently Amended) The method of claim 12, the step of measuring the distinguishing properties of the gravitationally separable particles of the sample in the micro tube includes a means for passing the micro tube in close proximity to sources (10), (11) and corresponding sensors (12), (13) so as to obtain a useful signal on an electronic measuring device.

16. (Currently Amended) The method of claim 12, the step of recording and interpreting the data comprising using software that is capable of further processing the data ~~results~~ for interpretation.

17. (Currently Amended) The method of claim 12, the step of performing microscopic examination of the sample as a ~~micro tube that contains the resulting~~ layered aggregate comprising viewing the side of the micro tube to describe and measure the layers in the micro tube based on its visual characteristics.

18. (New) The method of claim 12, the distinguishing properties comprising grain size.

19. (New) The method of claim 12, the distinguishing properties comprising substance.

20. (New) The method of claim 12, the distinguishing properties comprising the ratio of one group of gravitationally separable particles to another group of gravitationally separable particles.